

Message Text

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E.O.11652: N/A
TAGS: PARM, TECH, IAEA
SUBJECT: ADVISORY GROUP MEETING ON SAFEGUARDING REPRO-
CESSING PLANTS, JUNE 12-16, 1978

REF: STATE 122989

1. SUBJECT MEETING WAS HELD WITH PARTICIPATION OF ARGENTINA, BRAZIL, BELGIUM, FRANCE, FRG, INDIA, ITALY, JAPAN, NETHERLANDS, PAKISTAN, USSR, UK, US AND EURATOM. THE MORE ACTIVE PARTICIPANTS WERE FRANCE, FRG, NETHERLANDS, UK, US AND EURATOM.
2. US HAD ASSISTED IN DEVELOPMENT OF A WORKING PAPER (AG 188) DURING APRIL 1978 CONSULTANT MEETING AND SUPPORTED THE PAPER DURING THE ADVISORY GROUP MEETING. IN ADDITION TO THE REASONS CONTAINED IN THE ADVISORY GROUP'S REPORT TO THE DIR GEN (PARA 4 BELOW), CERTAIN UNCLASSIFIED

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MEMBERS, IN PARTICULAR FRG AND FRANCE, WERE NOT RPT NOT PREPARED TO ENDORSE AG 188 BECAUSE OF SOME OF THE TECHNICAL SAFEGUARDS CRITERIA CONTAINED IN AG 188 AND BECAUSE OF POSSIBLE IMPLICATIONS OF SUCH CRITERIA ON AGENCY ACCESS TO INTERNAL FACILITY PROCESS STAGES AND DATA.

3. DDG ROMETSCH, WHO CHAIRED MOST OF THE MEETING, STATED INTENTION TO FORWARD TO DIR GEN THE ADVISORY GROUP'S REPORT AND AG 188, NOTING TO THE DIR GEN THAT THE ADVISORY GROUP DID NOT RPT NOT ENDORSE AG 188.

4. FOLLOWING IS THE REPORT TO THE DIRECTOR GENERAL BY THE ADVISORY GROUP ON THE SAFEGUARDING OF REPROCESSING FACILITIES. BEGIN TEXT.

A. DURING THE WEEK OF 12-16 JUNE 1978 AN ADVISORY GROUP MEETING WAS HELD IN VIENNA TO DEVELOP ADVICE ON THE POSSIBLE TECHNIQUES FOR THE SAFEGUARDING OF REPROCESSING FACILITIES, INCLUDING A DEFINITION OF APPROACHES AND PROCEDURES WITHIN THE AGENCY'S PRESENT SAFEGUARDS SYSTEMS INFCIRC/66/REV 2 AND INFCIRC/153. AS A FIRST INPUT TO THE DISCUSSIONS, THE GROUP HAD BEFORE IT THE WORKING PAPER, AG-188, MAY 1978. THIS REPORT TO THE DIRECTOR MEETING.

B. THE GROUP LIMITED ITS DISCUSSIONS TO THE SAFEGUARDING OF SMALL OR MEDIUM-SIZED FACILITIES (DEFINED ROUGHLY AS LESS THAN 300 T/A CAPACITY), DESIGNED TO PROCESS LWR-TYPE FUELS. THE WORKING PAPER SUPPLIED BY THE SECRETARIAT SERVED GENERALLY AS A USEFUL BASIS FOR THE DISCUSSIONS OF THE ADVISORY GROUP, AND SOME OF THE CONTAINED MATERIAL UNCLASSIFIED

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SHOULD BE USEFUL AS A STARTING POINT FOR FURTHER DEVELOPMENT. HOWEVER, THE GROUP WAS NOT ABLE, BECAUSE OF THE LARGE VOLUME OF MATERIAL PRESENTED AND THE COMPLEX MATTERS INVOLVED, TO DISCUSS ALL PARTS OF THE WORKING PAPER IN DETAIL, AND ACCORDINGLY DID NOT ATTEMPT TO PREPARE A REVISED PAPER. THE GROUP SUGGESTS THAT THE AGENCY MAY WISH NOT TO ATTEMPT TO PREPARE A REVISED WORKING PAPER AT THIS TIME, BUT TO PURSUE THE COMPREHENSIVE STUDIES RECOMMENDED IN THE NEXT PARAGRAPH, AND TO PREPARE AT A LATER DATE A REPORT BASED ON THE RESULTS OF THOSE AND OTHER EFFORTS.

C. FIRST AND FOREMOST, THE ADVISORY GROUP RECOMMENDS THAT THE AGENCY UNDERTAKE, WITH THE STRONG SUPPORT AND CLOSE COLLABORATION OF THE MEMBER STATES, A COMPREHENSIVE STUDY OF SAFEGUARDS SYSTEMS AND TECHNIQUES FOR REPROCESSING FACILITIES IN ORDER TO IMPROVE THE COST EFFECTIVENESS OF SUCH SAFEGUARDS, WITH THE AIM OF DEVELOPING A METHODOLOGY FOR ASSESSING VARIOUS COMBINATIONS OF MATERIALS ACCOUNTANCY AND CONTAINMENT-SURVEILLANCE (C-S) TECHNIQUES. AS EXAMPLES, THIS COMPREHENSIVE STUDY SHOULD INCLUDE:

(A) THE DEVELOPMENT OF MEANS FOR QUANTIFYING THE ASSURANCES GIVEN BY BOTH MATERIALS ACCOUNTANCY TECHNIQUES AND C-S AND COMBINATIONS THEREOF;

(B) AN ANALYSIS OF THE DEGREE TO WHICH ALTERNATIVE SAFEGUARDS APPROACHES WOULD MEET AGENCY OBJECTIVES AND CRITERIA;

(C) THE DEVELOPMENT OF FEASIBLE SAFEGUARDS TECHNIQUES AND APPROACHES IN ORDER TO ENABLE THE AGENCY TO MAINTAIN CONTINUITY OF KNOWLEDGE OF THE FLOW AND INVENTORY OF NUCLEAR MATERIALS DURING INTERVALS BETWEEN CLEANOUT PHYSICAL INVENTORIES;
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(D) EXAMINATION OF THE COST EFFECTIVENESS OF VARIOUS ALTERNATE SAFEGUARDS STRATEGIES, APPROACHES AND TECHNIQUES:

(E) APPLICATION OF THE RESULTS OF THE GENERALIZED STUDY TO PUREX REPROCESSING FACILITIES IN ORDER TO DESIGN OPTIMIZED SAFEGUARDS STRATEGIES AND APPROACHES FOR SUCH PLANTS: AND

(F) IN DUE COURSE EXAMINATION OF THE APPLICABILITY OF

SAFEGUARDS APPROACHES DEVELOPED FOR SMALL OR MEDIUM-SIZED FACILITIES TO LARGE FACILITIES, AND DEVELOPMENT OF ADAPTATIONS OR NEW APPROACHES WHERE NECESSARY.

(G) INDICATION OF PRIORITIES IN DEVELOPMENT OF DIFFERENT SAFEGUARDS METHODS AND TECHNIQUES.

FURTHER RESEARCH AND DEVELOPMENT EFFORT SHOULD ALSO RELATE TO THE STUDY OF SAMPLING TECHNIQUES, SAMPLE PREPARATION METHODS AND PROBLEMS ASSOCIATED WITH SAMPLE STORAGING AND TRANSPORTATION AS WELL AS TO THE DEVELOPMENT OF NECESSARY NDA AND ANALYTICAL MEASUREMENT TECHNOLOGIES AIMED AT THE VERIFICATION OF NUCLEAR MATERIAL ON A RAPID TIME SCALE, AND THE DEVELOPMENT OF ADEQUATE TAMPER-RESISTANT AND RELIABLE CONTAINMENT AND SURVEILLANCE DEVICES.

D. THE ADVISORY GROUP ALSO TOOK NOTE THAT THERE ARE A UNCLASSIFIED

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NUMBER OF ON-GOING-RESEARCH PROGRAMMES RELATING TO SAFEGUARDS TECHNOLOGY FOR REPROCESSING FACILITIES, AND THAT THESE PROGRAMMES MAY PROVIDE USEFUL INPUTS TO THE RECOMMENDED STUDIES. THE GROUP SUPPORTS THE AGENCY'S EFFORTS IN THE DEVELOPMENT OF IMPROVED SAFEGUARDS PROCEDURES, TECHNIQUES AND METHODS ESPECIALLY FOR REPROCESSING PLANTS

E. THE ADVISORY GROUP DISCUSSED BRIEFLY THE AGENCY'S SAFEGUARDS OBJECTIVES AND CRITERIA AS SET FORTH IN SECTION 4.1 "SAFEGUARDS OBJECTIVES AND CRITERIA" OF THE WORKING PAPER, BUT RECOGNIZED THAT DISCUSSION ON SOME ASPECTS OF THIS SUBJECT WERE AT PRESENT PENDING IN OTHER FORUMS, AND THAT IT WOULD NOT BE WISE FOR THE GROUP TO DUPLICATE SUCH DISCUSSIONS, ALTHOUGH THEIR RESULTS WOULD NECESSARILY HAVE AN IMPACT ON THE TECHNICAL ASPECTS OF THE PROBLEM.

F. THE ADVISORY GROUP NOTED THAT THE AGENCY HAS COMPLETED ONE FACILITY ATTACHMENT FOR A REPROCESSING FACILITY, AND THAT SEVERAL OTHERS ARE IN VARIOUS STAGES OF COMPLETION. THE GROUP BELIEVES THAT THE EXPERIENCE GAINED BY THE AGENCY IN THE IMPLEMENTATION OF SAFEGUARDS UNDER THESE ATTACHMENTS SHOULD PROVE VALUABLE, AND HOPES THAT THAT EXPERIENCE CAN BE INCORPORATED IN DEVELOPMENT OF IMPROVED SAFEGUARDS PROCEDURES.

G. THE AGENCY HAD ASKED THE ADVISORY GROUP FOR ASSISTANCE IN THE COLLECTION OF MEASUREMENT UNCERTAINTY DATA RELEVANT TO THE SAFEGUARDING OF REPROCESSING FACILITIES. THE ADVISORY GROUP EXAMINED THIS QUESTION, AND CONCLUDED THAT AT THE PRESENT TIME THE AVAILABLE DATA ARE BASED ON WIDELY VARYING SETS OF DEFINITIONS AND THEREFORE ARE NOT DIRECTLY COMPARABLE. THE GROUP SUGGESTS THAT THE AGENCY USE THE

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STATISTICAL DEFINITIONS OF ERROR VARIANCES GIVEN IN PART
F OF THE SAFEGUARDS TECHNICAL MANUAL AS A BASIS FOR A
REQUEST FOR UNCERTAINTY DATA.

H. WHILE THE GROUP RECOGNIZES THAT THE COMPREHENSIVE
STUDY PREVIOUSLY RECOMMENDED CANNOT BE COMPLETED IN ANY
SHORT PERIOD OF TIME, THE GROUP ALSO FEELS THAT THE SUB-
JECT OF SAFEGUARDING REPROCESSING FACILITIES IS OF
SUFFICIENT IMPORTANCE TO JUSTIFY THE SCHEDULING OF FURTHER
ADVISORY GROUP MEETINGS WITHOUT UNDUE DELAY. THE GROUP
RECOMMENDS THAT IT SHOULD BE RE-CONVENED IN THE COURSE OF
1979 TO CONSIDER HOW BEST TO TAKE INTO ACCOUNT THE
FOLLOWING:

- A. THE GENERAL VIEWS EXPRESSED DURING THE DISCUSSION
OF AG-188;
- B. AGENCY SAFEGUARDS OBJECTIVES AND CRITERIA AS THEY
MAY HAVE EVOLVED;
- C. THE ACCUMULATION OF AGENCY EXPERIENCE IN SAFEGUARD-
ING EXISTING REPROCESSING FACILITIES AS THIS EXPERIENCE
MAY BE AVAILABLE; AND
- D. THE RESULTS OF AGENCY AND INTERNATIONAL STUDIES OF
SAFEGUARDS SYSTEMS FOR REPROCESSING FACILITIES, AND OTHER
RELEVANT SAFEGUARDS R AND D.

I. FINALLY, THE ADVISORY GROUP WISHES TO THANK THE AGENCY
FOR CONVENING THIS MEETING TO ADVISE THE AGENCY ON THE
SAFEGUARDING OF REPROCESSING FACILITIES, A SUBJECT WHICH
IS CLEARLY OF EXTREME IMPORTANCE AT THE PRESENT TIME. THE
GROUP ALSO WISHES TO THANK THE AUSTRIAN GOVERNMENT FOR
MAKING AVAILABLE THE EXCELLENT MEETING FACILITIES OF THE
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